DEPARTMENT OF ENVIRONMENTAL CONSERVATION

AIR QUALITY CONSTRUCTION PERMIT

Permit No.: **203CP01** Issue Date: **September 3, 2002**
Application No.: **X153**

The Department of Environmental Conservation, under the authority of AS 46.14, 18 AAC 50, 6 AAC 50, 18 AAC 15, and 18 AAC 50.318, issues a construction permit to the Permittee, **Anchorage Municipal Light & Power**, for the installation of a new replacement turbine blackstart unit at the **Sullivan Generation Plant Two**.

This permit satisfies the obligation of the owner and operator to obtain a construction permit as set out in AS 46.14.130(a).

As required by AS 46.14.120(c), the Permittee shall comply with the terms and conditions of this construction permit.

[18 AAC 50.320(b), 1/18/97]

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John F. Kuterbach, Manager Date
Air Permits Program

List of Abbreviations Used in this Permit

AAC .....Alaska Administrative Code
ADEC.....Alaska Department of Environmental Conservation
AS.....Alaska Statutes
ASTM.....American Society for Testing and Materials
C.F.R. .....Code of Federal Regulations
COMS .....Continuous Opacity Monitoring System
dscf.....Dry standard cubic foot
EPA .....US Environmental Protection Agency
gr./dscf.....grain per dry standard cubic foot (1 pound = 7000 grains)
GPH.....gallons per hour
HAPs .....Hazardous Air Pollutants [hazardous air contaminants as defined in AS 46.14.990(14)]
ID.....Source Identification Number
kPa.....kiloPascals
MACT .....Maximum Achievable Control Technology
NESHAPs.....Federal National Emission Standards for Hazardous Air Pollutants [as defined in 40 C.F.R. 61]
NSPS.....Federal New Source Performance Standards [as defined in 40 C.F.R. 60]
ppm.....Parts per million
PS .....Performance specification
PSD .....Prevention of Significant Deterioration
RM.....Reference Method
SIC. .....Standard Industrial Classification
SO_2.....Sulfur dioxide
TPH .....Tons per hour
TPY .....Tons per year
VOC .....volatile organic compound [as defined in 18 AAC 50.990(103)]
wt%.....weight percent

Section 1. Identification

Names and Addresses

Permittee:	Anchorage Municipal Light and Power 1200 East First Avenue Anchorage, AK 99501-1685
Facility:	George M. Sullivan Generation Plant Two
Location:	61° 13' 48" North; 149° 43' 4" West
Physical Address:	8670 Glenn Highway Anchorage, Alaska 99504
Owner:	Municipality of Anchorage, d/b/a Anchorage ML&P 1200 East First Avenue Anchorage, AK 99501-1685
Operator:	Anchorage Municipal Light and Power 8670 Glenn Highway Anchorage, AK 99504
Permittee's Responsible Official	Michael J. Scott, General Manager 1200 East First Avenue Anchorage, 99501-1685
Designated Agent:	Bob Day, Acting Energy Production Manager 1200 East First Avenue Anchorage, Alaska 99501-1685
Facility and Building Contact:	Jim Caress, Acting Plant Two Superintendent 1200 East First Avenue Anchorage, Alaska 99501-1685 (907) 263 - 5310
Fee Contact:	Karen Cucullu 1200 East First Avenue Anchorage, Alaska 99501 Cucullukm@ci.anchorage.ak.us
SIC Code of the Facility:	Code 4911 – Electrical Services.

Section 2. General Emission Information

Emissions of Regulated Air Contaminants, as provided in the Permittee's application:

Oxides of Nitrogen (NO_x), Carbon Monoxide (CO), Particulate Matter (PM-10), Sulfur Dioxide (SO_2), and Volatile Organic Compounds (VOC).

Construction Permit Classifications:

The installation of the blackstart unit at the Sullivan Generation Plant Two requires construction permit provisions requested by the owner or operator under 18 AAC 50.305(a)(4).

Facility Classifications as described under 18 AAC 50.300(b) through (g), modifications as described under 18 AAC 50.300(h), or Owner Requested Limit classification under 305(a)(1) through (4):

a. The Sullivan Generation Plant Two is classified as:
   i. an Ambient Air Facility as defined in 18 AAC 50.300(b)(2) because it contains fuel-burning equipment with a rated capacity of 100 million BTU or more;
   ii. a Prevention of Significant Deterioration (PSD) Major Facility as defined in 18 AAC 50.300(c) (1) because it has the potential to emit more than 250 tons per year of a regulated air containment; and
   iii. a Major Facility as defined in 18 AAC 50.300(c)(2)(a) because it has the potential to emit more than 100 tons per year of a regulated air contaminant, and is a fossil fuel fired electric plant of more than 250 million BTU per hour heat input;
b. The Permittee has requested Owner Requested Limits under 18 AAC 50.305(a)(4) to avoid classifying this project as a PSD major modification under 18 AAC 50.300(h)(3).

Section 3. Source Inventory and Description

Sources listed below have specific monitoring, record keeping, or reporting conditions in this permit.[1] Source descriptions and ratings are given for identification purposes only.

TABLE 1 Source Inventory

ID	Source Name	Source Description	Rating/size
3	GTG 8 Gas Turbine	General Electric Frame 7 PG 7111	1,136 MMBtu/hr
5	Turbine Blackstart Unit	Cummins Model : QSK19-C750 Curve Number : FR-4329	559kW (750 BHP) @2100 RPM

[1] The Sullivan Generation Plant Two also has other emission sources that are currently permitted under Air Quality Control Operating Permit No. 203TVP01, Issued April 11, 2001.

Section 4. Source-Specific Requirements

Diesel Fired Internal Combustion Engine: Source ID 5.

Visible Emissions

1. The Permittee shall not cause or allow visible emissions, excluding condensed water vapor, emitted from Source ID 5 listed in Table 1 to reduce visibility through the exhaust effluent

a. by greater than 20 percent for more than three minutes in any one hour, or

[18 AAC 50.055(a)(1), 1/18/97, 40 CFR 52.70, 11/18/97]

b. by more than 20 percent averaged over any six consecutive minutes.

[18 AAC 50.055(a)(1), 18 AAC 50.346(c), 05/03/002]
[18 AAC 50.320(a)(2), 1/18/97]

1.2 Monitor, record and report visible emissions in accordance with Operating Permit 203TVP01 issued April 11, 2001.

1.3 Conduct an initial visible emissions reading after start of operations of Source ID 5 within 6 months after installation; observe its exhaust for 20 minutes to obtain no less than 80 individual 15-second readings; conduct visible emission readings in accordance with Section 13 of the Operating Permit 203TVP01, Issued April 11, 2001.

Particulate Matter

2. The Permittee shall not cause or allow particulate matter emitted from Source ID 5 to exceed 0.05 grains per cubic foot of exhaust gas corrected to standard conditions and averaged over three hours. Monitor, record, and report according to Section 12 of the Operating Permit 203TVP01 issued April 11, 2001.

[18 AAC 50.055(b)(1), 1/18/97]
[18 AAC 50.350(d), 6/21/98]
[18 AAC 50.320(a)(2), 1/18/97]

Sulfur Compound Emissions

3. The Permittee shall not cause or allow sulfur compound emissions, expressed as SO_2 from Source ID 5, to exceed 500 PPM averaged over three hours.

[18 AAC 50.055(c), 1/18/97]
[18 AAC 50.320(a)(2, 1/18/97]

3.1 For the fuel used in Source ID 5, monitoring and record keeping shall be performed by Permittee as set out in Section 5, of the Operating Permit 203TVP01 issued April 11, 2001.

Section 5. Owner Requested Limits to Avoid Classification as a PSD Major Modification.

4. Limit the cumulative hours of operation for Source ID 5 not to exceed 300 hours per 12-month rolling period.

4.1 Monitor and record the hours of operation for Source ID 5. Record the date, time and the duration, in hours of operation, for Source ID 5. Calculate and record the cumulative 12-month rolling total hours of operation.

4.2 Report in the operating report required in Section 9 of Operating Permit 203TVP01 issued April 11, 2001, the 12-month rolling period total hours of operation for Source ID 5.

[18 AAC 50.305(a)(4), 1/18/97]

4.3 The Permittee shall submit to the department the engine serial number for Source ID 5 30 days after initial installation.

5. Limit the CO emissions of Source ID 3 to 185 tons per 12-month rolling period.

5.1 To verify the CO mass emission versus load correlation as set out in Condition 5.3I.A.1.a conduct an initial CO emission source test on Source ID 3 while burning natural gas before December 31, 2002. This in accordance with Section 8 and 9 of the Operating Permit 203TVP01 issued April 11, 2001; use Method 10, 40 CFR 60 Appendix A. Determine the load specific emission factor for Source ID 3.

5.1.1 During the CO emission source test, include a minimum of 5 different loads. The loads shall include the minimum load and the peak load within the normal operating range of the turbine. Determine the load specific emission factor consistent with Condition 5.1.2.

5.1.2 During the CO emissions test, determine the exhaust gas flow rate of the source using either Method 1-4 or Method 19, 40 CFR 60 Appendix A.

a. Measure and record the following turbine operational parameters during the tests, in accordance with the Permittee's standard operational practices. List each of the parameters, the relative humidity of the intake air, and the intake air temperature of the turbine shall be measured and recorded during the tests.

b. Measure and record the fuel consumption rate during the tests

5.1.3 The unit must be equipped with a dedicated fuel flow meter, accurate to +/- 5 percent error. Attach a copy of the fuel meter calibration results to the emission test report.

5.1.4 For the fuel gas used during the source testing, obtain a statement or receipt from the fuel gas supplier certifying the Higher Heat Value (HHV) of the fuel, according the AGA-8 Method. If a certificate is not available from the fuel gas supplier, then analyze a representative sample of the fuel gas to determine the HHV according the AGA-8 Method, or an alternative method approved by the Department. Attach a copy of the fuel analysis to the emission report.

5.2 For Source ID 3 burn only fuel gas.

5.3 Determine the CO mass emission for Source ID 3 for each hourly period, using the corresponding hourly Power production log, obtained from the control room operator logs; and by calculating the highest hourly CO emission value obtained from the estimating methods 5.3a) and 5.3b).

a. the hourly CO mass emissions in pounds calculated using the formula $CO\ (lb/hr) = 10^{\,3.0305 - 0.0512 * (MW\ Load)}$.

[Operation Permit 203TVP01 ,04/11/2001]

b. the representative hourly CO mass emissions in pounds using the greater of the two load-based CO emission factors determined under Condition 5.1.1, that bound the given hourly average load.

5.4 For each month, calculate the previous consecutive 12-month rolling period of CO emissions, based on the sum of the hourly calculations under Condition 5.3.

5.5 For each month of the operating report, include the calculated previous consecutive 12-month period CO emissions of Source 3 with the facility operating report required by Section 9 of the Operating Permit 203TVP01, Issued April 11, 2001.

5.6 Report under Section 9 of the Operating Permit 203TVP01 issued April 11, 2001 if the calculated previous consecutive 12-month period of CO emissions in a given month exceeds the limit in Condition 5.

[18 AAC 50.305(a)(4), 1/18/97]

Section 6. Standard Conditions Not Otherwise Included in the Permit

6. Consistent with Alaska law, for purposes of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any standard in this permit, nothing in this permit precludes the use of any credible evidence of information relevant to whether the facility would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

[18 AAC 50.320(a)(2), 1/18/97]
[Federal Citation: 40 C.F.R. 52.12(c), 7/1/99]

7. The Permittee must comply with each permit term and condition. Noncompliance constitutes a violation of AS 46.14, 18 AAC 50, and the Clean Air Act, except for those requirements designated as not federally-enforceable, and is grounds for:

7.1 an enforcement action,

7.2 permit termination, revocation and reissuance, or modification in accordance with AS 46.14.280, or

7.3 denial of an construction-permit renewal application.

[18 AAC 50.345(a)(1), 1/18/97]
[18 AAC 50.320(a)(1), 1/18/97]

8. It is not a defense in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with a permit term or condition.

[18 AAC 50.345(a)(2), 1/18/97]
[18 AAC 50.320(a)(2), 1/18/97]

9. Each permit term and condition is independent of the permit as a whole and remains valid regardless of a challenge to any other part of this permit.

[18 AAC 50.345(a)(3), 1/18/97]
[18 AAC 50.320(a)(2), 1/18/97]

10. Compliance with permit terms and conditions is considered to be compliance with those requirements that are:

10.1 included and specifically identified in the permit, or

10.2 determined in writing in the permit to be inapplicable.

[18 AAC 50.345(a)(4), 1/18/97]
[18 AAC 50.320(a)(2), 1/18/97]

11. The permit may be modified, reopened, revoked and reissued, or terminated for cause. A request by the Permittee for modification, revocation and reissuance, or termination or a notification of planned changes or anticipated noncompliance does not stay any construction permit condition.

[18 AAC 50.345(a)(5), 1/18/97]
[18 AAC 50.320(a-c), 1/18/97]

12. The permit does not convey any property rights of any sort, nor any exclusive privilege.

[18 AAC 50.345(a)(6), 1/18/97]
[18 AAC 50.320(b), 1/18/97]

13. The Permittee shall allow an officer or employee of the Department or an inspector authorized by the Department, upon presentation of credentials and at reasonable times, with the consent of the owner or operator, to:

13.1 enter upon the premises where a source subject to the construction permit is located or where records required by the permit are kept,

13.2 have access to and copy any records required by the permit,

13.3 inspect any facilities, equipment, practices, or operations regulated by or referenced in the permit, and

13.4 sample or monitor substances or parameters to assure compliance with the permit or other applicable requirements.

[18 AAC 50.345(a)(7), 1/18/97]
[18 AAC 50.320(a)(2), 1/18/97]